

**Two New Species of the *Rhabdochona* Railliet, 1916
(Rhabdochonidae) from a Fresh Water Fish
Cyprinion macrostomus Heckel, from Iraq**

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(Received for publication ; September 14, 1977)

Introduction

As yet no rhabdochonid nematode has been recorded from Iraqi fresh water fish. This paper describes two new species of the genus *Rhabdochona* Railliet, 1916, from local fish, *Cyprinion macrostomus* Heckel.

Specimens of the nematode were collected from the intestine of *Cyprinion macrostomus*, from river Tigris, Mosul District, fixed and then preserved in 70% alcohol. They were examined in glycerine jelly or lactophenol preparations.

***Rhabdochona mesopotamica* n. sp.**

(Plate I, Figs. 1-6)

Description: Small worm, with eel like movement. Body cylindrical attenuated at both ends. Mouth with two lateral lips, buccal capsule funnel shaped supported by 20 short longitudinal ridges, mesostome long, narrow and of uniform diameter. Oesophagus long, divided into a short narrow muscular anterior and along glandular posterior parts. Intestine simple without diverticula, cuticle smooth. The host fishes are found to be infected throughout the year.

Male: Body 3.18 mm long, 0.10 to 0.12

mm wide. Buccal capsule (prostome) 0.012 to 0.016 mm long, 0.008 to 0.012 mm wide. Pharynx (mesostome) 0.036 to 0.072 mm long, 0.004 to 0.008 mm wide. Muscular part of oesophagus 0.08 to 0.20 mm long, 0.016 to 0.02 mm wide; posterior glandular part 0.85 to 1.17 mm long, 0.32 to 0.65 mm wide. Tail pointed, 0.12 to 0.20 mm long and curved ventrally. Caudal alae narrow, extending upto the tip of the tail. There are 5 pairs of pre-cloacal and 6 pairs of post-cloacal papillae. Spicules unequal and dissimilar. Right spicule smaller, 0.07 to 0.08 mm long, with a reflected barb. The left or the longer spicule 0.28 to 0.32 mm long and distally provided with a long expanded spoon-like structure. The spicule ratio 1:4, gubernaculum absent.

Female: Body 3.35 to 7.31 mm long, 0.13 to 0.16 mm wide. Prostome, 0.02 mm long and 0.12 mm wide; mesostome, 0.03 to 0.07 mm long, 0.004 to 0.008 mm wide. Anterior muscular and posterior glandular part of oesophagus 0.17 to 0.29 mm long, 0.02 to 0.024 mm wide and 1.11 to 1.62 mm long, 0.09 to 0.12 mm wide, respectively. Excretory pore located anteriorly at a distance of 0.16 to 0.22 mm from the anterior body end. Tail straight, pointed posteriorly, 0.14 to 0.20 mm long. Vulva at middle of the body and provided with conspicuous lips. Vagina short, muscular and anteriorly directed. Eggs thick shelled, smooth, 0.024 to 0.032

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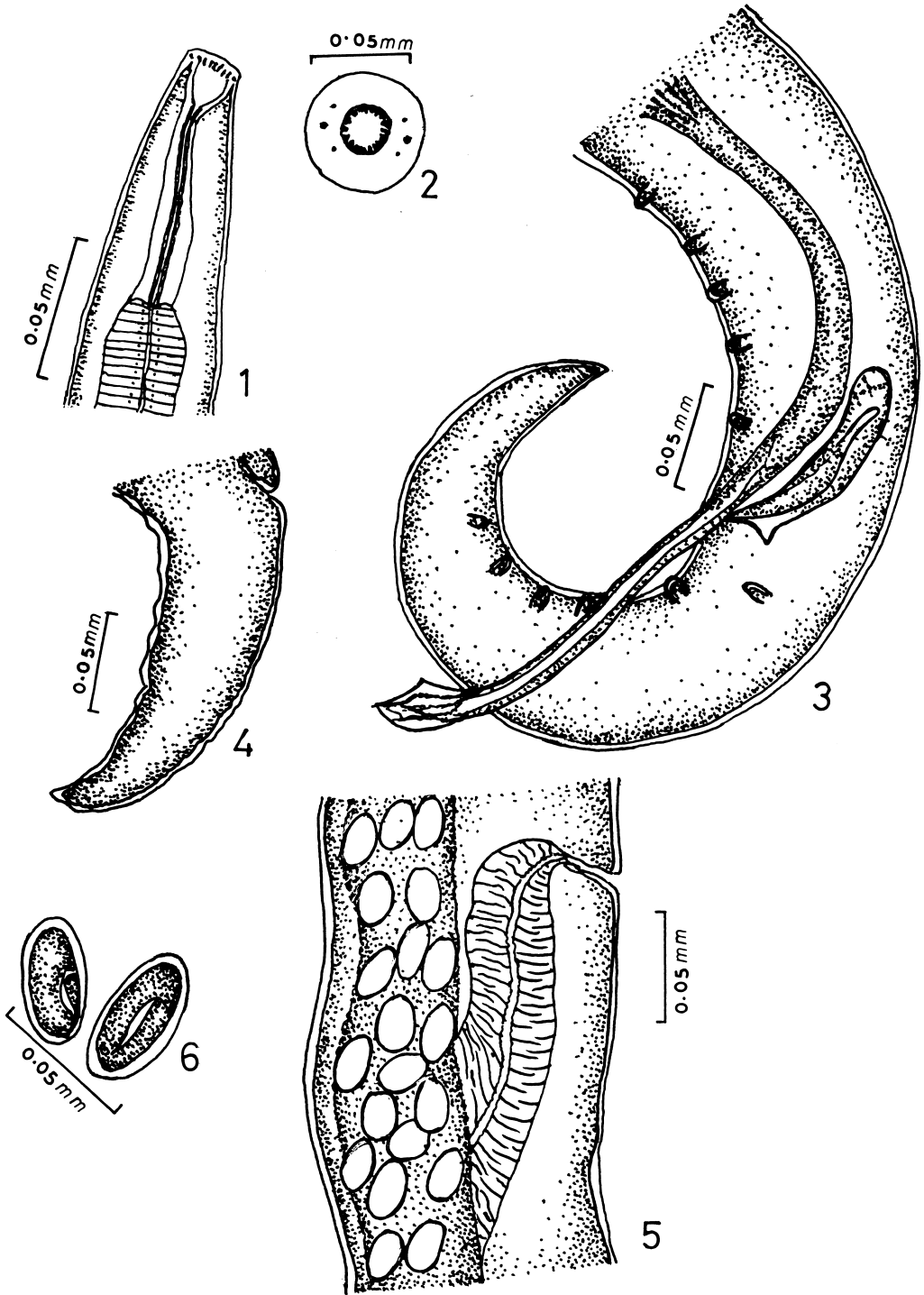


Plate I

Figs. 1-6. *Rhabdochona mesopotamica* n. sp.
 Fig. 1 Anterior region of female, lateral view. Fig. 2 Apical view of female. Fig. 3 Male tail, lateral view. Fig. 4 Female tail, lateral view. Fig. 5 Vulva. Fig. 6 Eggs.

mm long, 0.016 to 0.02 mm wide.

Host : *Cyprinion macrostomus* Heckel

Location : Intestine

Locality : Mosul

***Rhabdochona grandipapillata* n. sp.**

(Plate II, Figs. 1-6)

Description : Worms large, cylindrical and attenuated at both ends. Mouth with two lateral lips, buccal capsule funnel shaped and supported by 16 longitudinal ridges. Oesophagus long with two parts also. The fish host is found to be infected throughout the year.

Male : Body 6.46 to 7.48 mm long, about 0.09 mm wide. Prostome 0.018 to 0.02 mm long, while mesostome 0.06 to 0.068 mm long, 0.04 to 0.08 mm wide. Anterior muscular and the posterior glandular part of oesophagus 0.20 to 0.26 mm long, 0.02 to 0.03 mm wide and 1.36 to 1.7 mm long, 0.08 to 0.34 mm wide, respectively. Tail pointed, recurved ventrally, 0.16 to 0.20 mm long. Caudal alae narrow, extending upto the tip of the tail. There are 12 pairs of pre-cloacal, and five pairs of post-cloacal papillae. Spicules unequal and dissimilar. Right (smaller) spicule scoop-like, 0.06 to 0.07 mm long, 0.02 to 0.03 mm wide. Left (longer), 0.24 to 0.30 mm long, 0.01 to 0.02 mm wide. The spicule ratio, 1 ; 4. The cervical papillae very large, located at about 0.03 mm from the anterior end of the worm, and consists of three parts, a hook-like projection about 0.012 by 0.02 mm, a base 0.004 by 0.016 mm, and a small process, 0.004 mm long.

Female : Body 9.2 to 15.3 mm long, 0.08 to 0.1 mm wide. Prostome, 0.016 to 0.2 mm long, about 0.02 mm wide. Mesostome, 0.06 to 0.09 mm long, 0.004 to 0.008 mm wide. Anterior muscular and posterior glandular parts of oesophagus, 0.24 to 0.28 mm long, 0.024 to 0.036 mm wide, and 0.22 to 0.48 mm long, 0.08 to 0.12 mm wide, respectively. Tail end, straight, pointed posteriorly, 0.20 to 0.24 mm long. Vulva at middle of the body. Vagina short, muscular and upwardly directed. Eggs thick shelled, smooth, 0.016 to 0.024 mm long, 0.008 to 0.014 mm wide.

Host : *Cyprinion macrostomus* Heckel

Location : Intestine

Locality : Mosul

Discussion

Rhabdochoinoides n. subgenus

Rhabdochona mesopotamica n. sp.

According to Moravec (1975), this parasite of *Rhabdochona* can be put under a certain subgenus. On the bases of buccal teeth number, it can be put under the subgenus *Sinonema* Moravec, 1975. But on the bases of the body ends, the absence of lateral alae, and the smoothed eggs, it can be put under subgenus *Rhabdochona* Railliet, 1916. The present species, however, lacks deirids in comparison with other subgenera including *Sinonema* and *Rhabdochona*. There has been no report of any species without deirids except that of *R. minima* Moravec and Daniel, 1976. The authors doubt the absence of this structure in *R. minima*, because its description by Moravec and Daniel (1976) was based on only two small male specimens. Therefore, the authors assign another subgenus in addition to the five subgenera of Moravec (1975) which are still incomplete. The name *Rhabdochonoides* (a new subgenus) is given due to its close similarity to the subgenus *Rhabdochona*. The new subgenus has the following diagnosis : prostome provided with 20 anterior teeth ; basal teeth, lateral alae and deirids are absent ; male tail tip pointed ; female tail straight pointed posteriorly ; eggs thick shelled, smooth without swellings or any projections.

The bases of species classification of this parasite are discussed by the following. According to Rasheed (1965) and Moravec (1975), this parasite bears similarities and dissimilarities to Eurasian species of *Rhabdochona*. The body length of both males and females resembles that of *R. singhi* Ali, 1956, but it is smaller than that of *R. sarana* Karve et Naik, 1951, *R. glyptothoracic* Karve et Naik, 1951, *R. garuari* Agrawal, 1965, and *R. hospiti* Thapar, 1950. Concerning the buccal teeth number, our findings con-

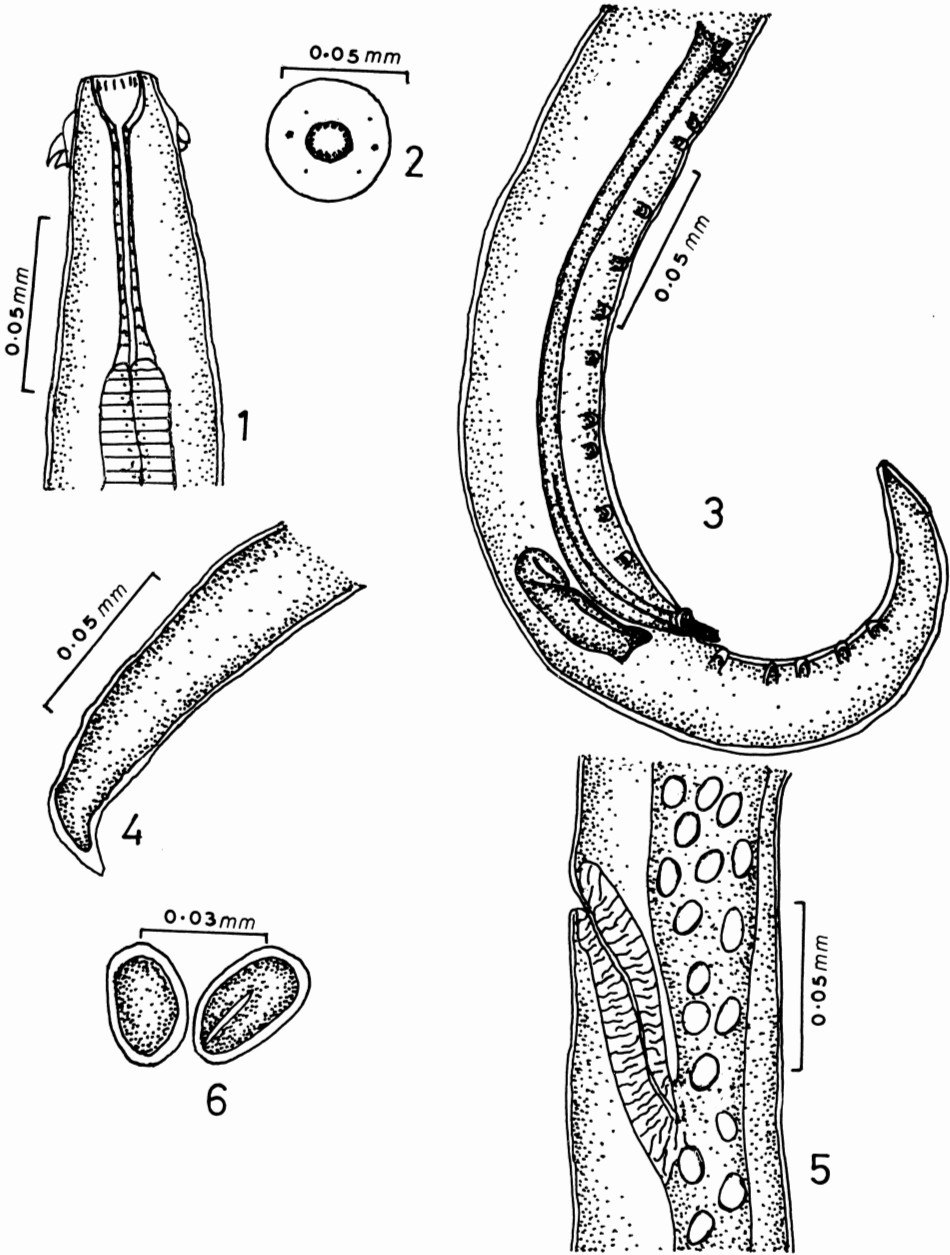


Plate II

Figs. 1-6. *Rhabdochona grandipapillata* n. sp.

Fig. 1 Anterior region of female, Lateral view. Fig. 2 Apical view of female. Fig. 3 Male tail, lateral view. Fig. 4 Female tail, lateral view. Fig. 5 Vulva. Fig. 6 Eggs.

firm the description of Wu (1949) who reported 20-22 buccal teeth in *R. euchiloglanis* in which Moravec (1975) doubted. The pre-

cloacal papillae number is somewhat similar to that of *R. singhi*, but differs from that of *R. hospeti*. The postcloacal papillae num-

ber is similar to that of *R. hospeti* but differs from that of *R. singhi*. The spicule length of male is to some extent close to that of *R. cascadilla* Wigdor, 1918, (a Northern American species), but it differs from that of *R. hospeti*. The spicule ratio closely resembles to that of *R. anguillae* Spaul, 1927, and differs from that of the other Eurasian species. The vulva position is similar to that of *R. hellichi* Sramek, 1910. The eggs are smooth in comparison with that of *R. smythi* Agrawal, 1965, in which the eggs are filamentous.

Therefore, this parasite distinctly differs from all other known species of *Rhabdochona* in the absence of deirids, body length, buccal teeth number, pre- and post- cloacal papillae number, spicule length and ratio, and egg surface. Moreover, the host and the geographical region are different. This parasite is considered as a new species which is designated as *Rhabdochona mesopotamica* n. sp.

Rhabdochona grandipapillata n. sp.

The present parasite when referred to the key proposed by Rasheed (1965) bears similarities and dissimilarities with one or other species previously described. The size and complexity of deirids resembles that of *R. fortunatowi* Dinniki, 1933, and *R. ovifilamenta* Weller, 1938; however, the morphology of this structure differs from that of the rest reported species of *Rhabdochona* including *R. mesopotamica* n. sp. (above mentioned). The male size is smaller than that of *R. glyptothoracic* and that of *R. hellichi*. The female is smaller than that of *R. glyptothoracic* and that of *R. hospeti*. Also, the male and female are larger than that of *R. mesopotamica* n. sp. The buccal teeth number is less than that of *R. mesopotamica* n. sp.

From the above comparisons, therefore, the present parasite is placed directly under the subgenus *Rhabdochona* Railliet 1916, after its reconstruction by Moravec (1975), and it is considered as a new species named: *Rhabdochona grandipapillata* n. sp.

Summary

Two new species of the genus *Rhabdochona* Railliet, 1916, were described and compared with Eurasian species from a freshwater fish, *Cyprinion macrostomus* Heckel, in Iraq. The first one, named *R. mesopotamica* n. sp. is considered to represent a new subgenus of *Rhabdochona* due mainly to its large number of buccal teeth and absence of deirids. The new subgenus is named *Rhabdochonoides*. The second new species is named *R. grandipapillata* n. sp. coincides directly to the subgenus *Rhabdochona* of Moravec (1975).

Description and measurement are based on 10 specimens of both male and female worms for the two species. Paratype and holotype specimens are deposited at Parasitology Section, Biology Department, College of Science, University of Mosul, Iraq. Additional specimens are deposited at Helminths Section, British Museum (N. H.), U. K. The authors are greatly indebted to Dr. Prudhoe (Formerly Director of British Museum) for his help in confirming the new species.

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イラク産淡水魚 *Cyprinion macrostomus* から得た *Rhabdochona* 属新線虫 2 種

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モスル地区のチグリス川産淡水魚(コイ科)の腸から得られた線虫をグリセリンゼリーまたはラクトフェノールで透化, 形態および虫体各部測定は2種とも雌雄各10虫体につき精査した。その結果, ユーラシア産 *Rhabdochona* 属既知種との形態的相違点を重視し, それ

ぞれ *Rhabdochona mesopotamica* n. sp., *R. grandipapillata* n. sp. と命名した。前者にはおもな特徴として口腔内歯が多数で頸乳頭を欠いていることから新亜属 *Rhabdochonoides* を設けた。後者は既設の *Rhabdochona* 亜属に属す。